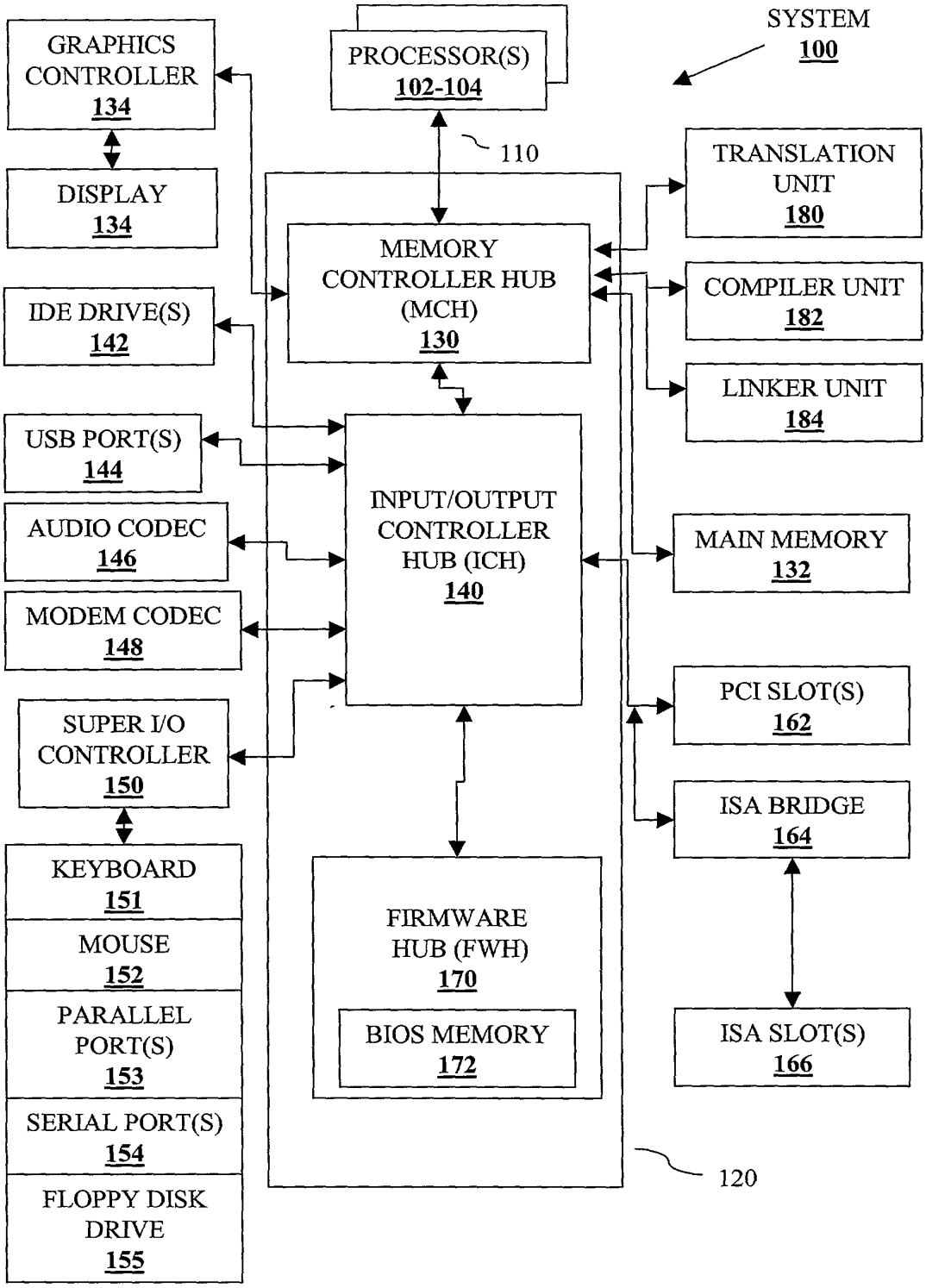
SYSTEM
100
PROCESSOR(S)
102-104
110
GRAPHICS CONTROLLER
134
DISPLAY
134
IDE DRIVE(S)
142
USB PORT(S)
144
AUDIO CODEC
146
MODEM CODEC
148
SUPER I/O CONTROLLER
150
KEYBOARD
151
MOUSE
152
PARALLEL PORT(S)
153
SERIAL PORT(S)
154
FLOPPY DISK DRIVE
155
MEMORY CONTROLLER HUB (MCH)
130
INPUT/OUTPUT CONTROLLER HUB (ICH)
140
FIRMWARE HUB (FWH)
170
BIOS MEMORY
172
TRANSLATION UNIT
180
COMPILER UNIT
182
LINKER UNIT
184
MAIN MEMORY
132
PCI SLOT(S)
162
ISA BRIDGE
164
ISA SLOT(S)
166
120

FIG. 1

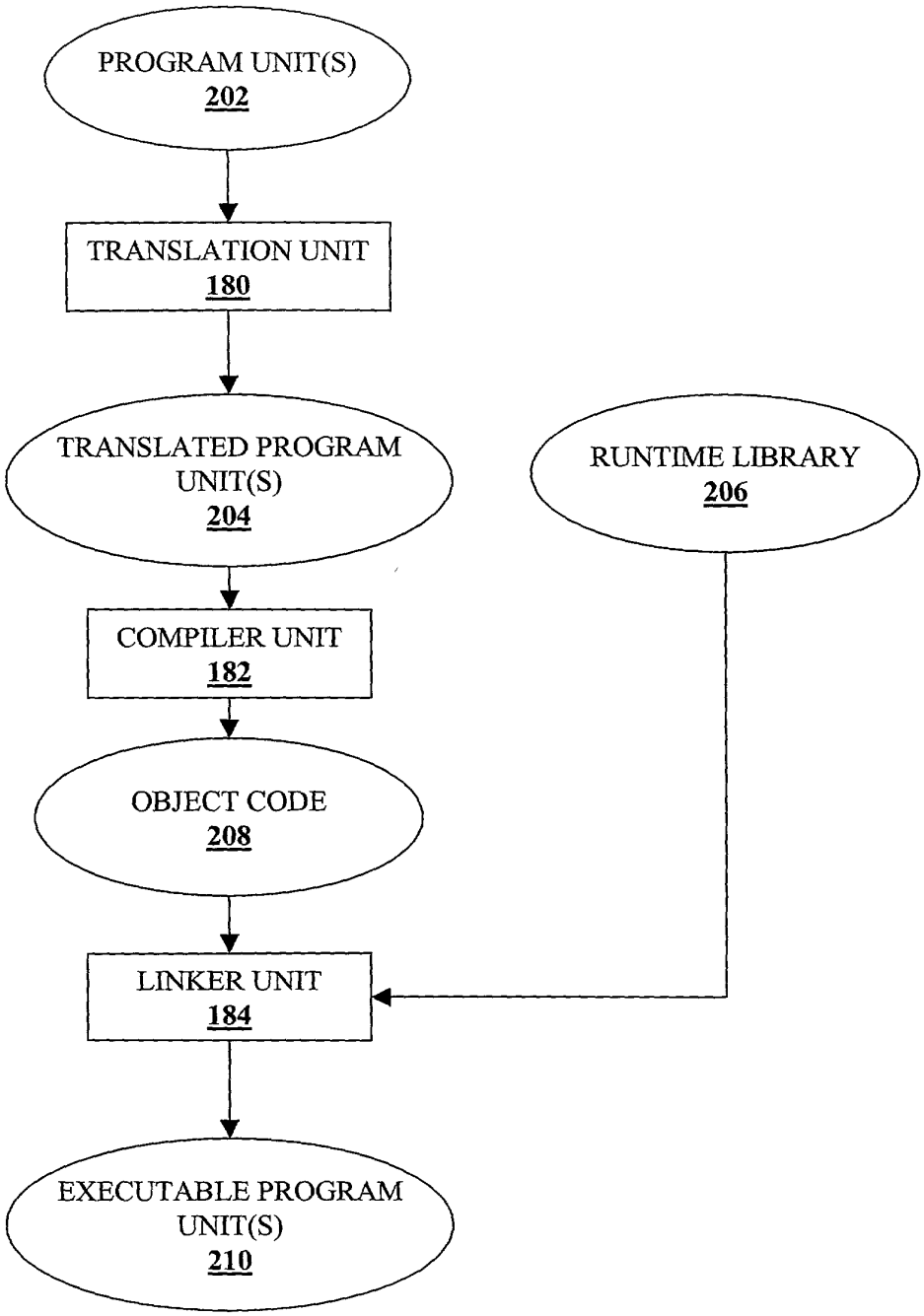
PROGRAM UNIT(S)
202
TRANSLATION UNIT
180
TRANSLATED PROGRAM UNIT(S)
204
RUNTIME LIBRARY
206
COMPILER UNIT
182
OBJECT CODE
208
LINKER UNIT
184
EXECUTABLE PROGRAM UNIT(S)
210

FIG. 2

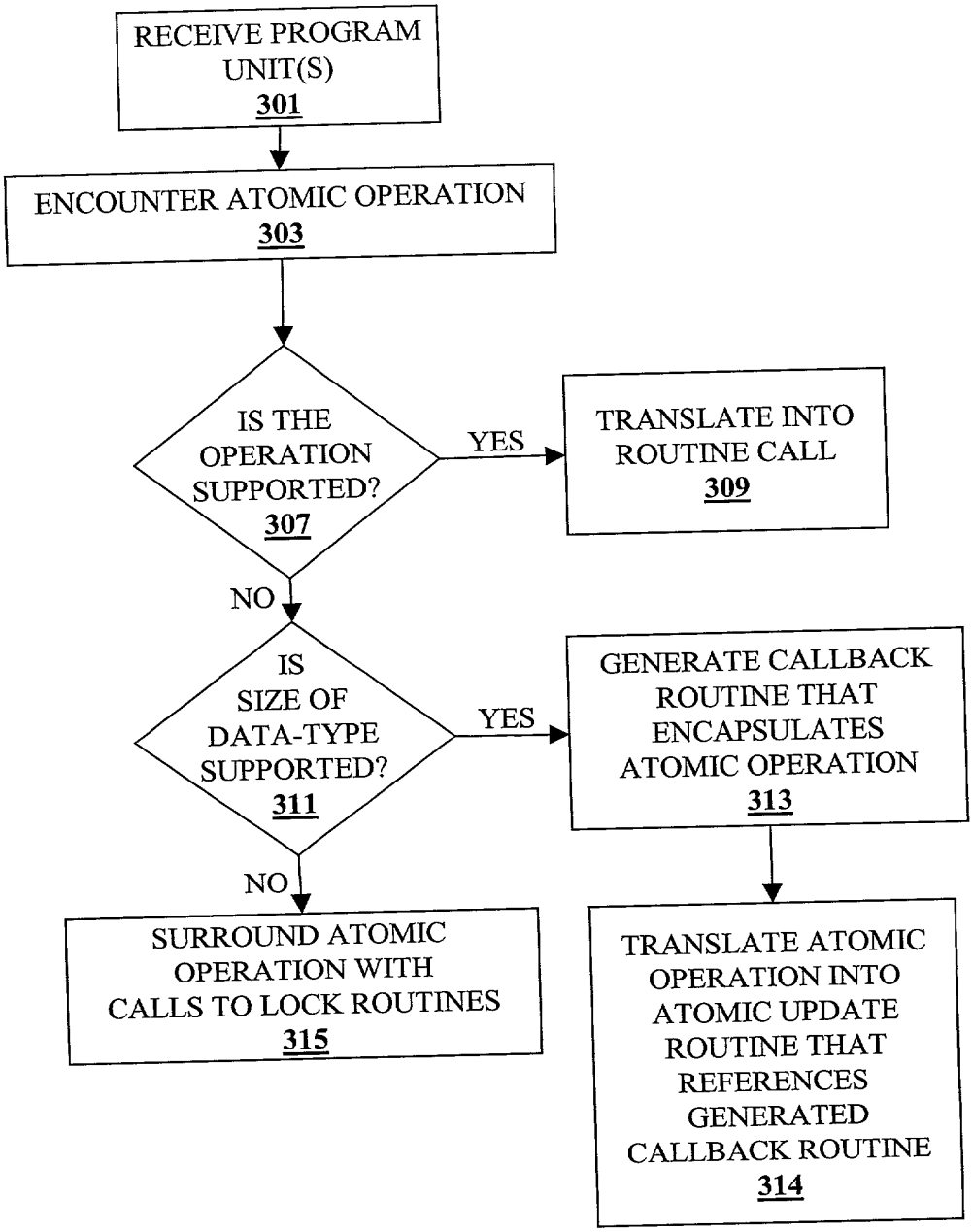
RECEIVE PROGRAM UNIT(S)
301
ENCOUNTER ATOMIC OPERATION
303
IS THE OPERATION SUPPORTED?
307
YES
TRANSLATE INTO ROUTINE CALL
309
NO
IS SIZE OF DATA-TYPE SUPPORTED?
311
YES
GENERATE CALLBACK ROUTINE THAT ENCAPSULATES ATOMIC OPERATION
313
NO
SURROUND ATOMIC OPERATION WITH CALLS TO LOCK ROUTINES
315
TRANSLATE ATOMIC OPERATION INTO ATOMIC UPDATE ROUTINE THAT REFERENCES GENERATED CALLBACK ROUTINE
314

FIG. 3